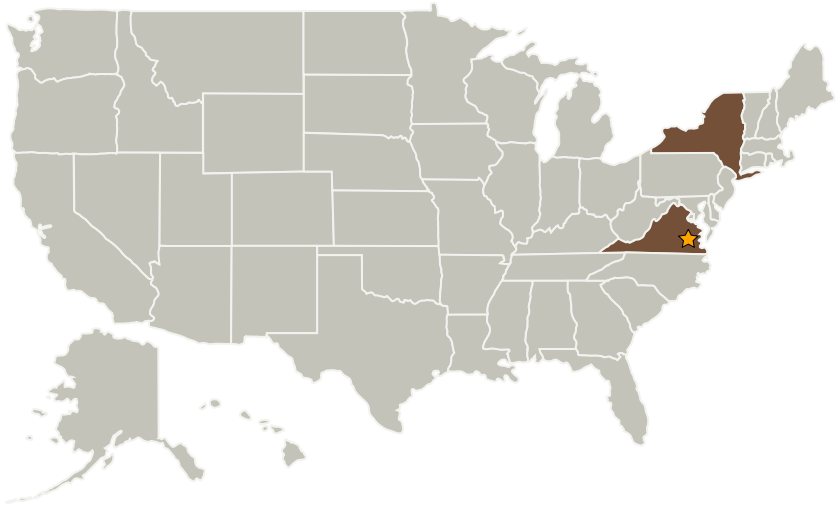
Multispectral Panoramic Imaging System, Phase I

Completed Technology Project (2006 - 2006)

Project Introduction

International Electronic Machines Corporation, a leader in the design of precision imaging systems, will develop an innovative multispectral, panoramic imaging system for use on exploratory landing craft. During Phase I, IEM will build upon and advance alternative strategies, including our patent pending Synthetic Field of View (SynthFOV) technology and our Pan/Tilt Mirror System (PTMS), initially conceived by IEM for the USMC Gladiator UGV. These two technologies will eliminate or significantly reduce the use of conventional moving parts, will decrease power demand, will reduce launch weight, and will require less space than current imaging systems. SynthFOV incorporates an array of Off-Axis Telescopes to focus light to a sensor via a series of optically precise mirrors. The PTMS uses a centrally configured mirror that rotates and tilts along both horizontal and vertical axes thereby directing the reflected light to a sensor. Alternative configurations include use of two imagers for stereo panoramic imaging; incorporating filter wheels for multispectral imaging on a single sensor; use of multiple sensors for imaging visible, near IR, and other wavelengths, and use of multispectral lenses to further reduce weight. IEM will evaluate these and other alternatives and will demonstrate the applicability of the selected approach through pre-prototype testing.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
International Electronic Machines Corporation(IEM)	Supporting Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB)	Troy, New York

Primary U.S. Work Locations	
New York	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.3 Optical Components